

CLAIM LISTING

The listing of claims below will replace all prior versions and listings of claims in the application.

1-36. Cancelled

37. (New) A medical device comprising

a substrate constructed and arranged for insertion into a patient and having at least one lumen, said substrate having an exterior surface and an interior luminal surface defining the lumen, wherein the substrate comprises polymers or copolymers of polyurethane or silicon; and a plurality of monomer molecules directly graft polymerized on at least one of the surfaces of the substrate, forming a coating thereon, wherein said coating on said substrate is a polymer or copolymer or a derivative of said polymer or copolymer formed from a monomer or derivative thereof selected from the group consisting an acrylamide, N,N-dimethylacrylamide, and mixtures thereof.

38. (New) The medical device of Claim 37, which is a catheter, guide wire or medical instrument.

39. (New) The medical device of Claim 38, wherein the catheter is selected from the group consisting of PTCA catheters, cardiology catheters, central venous catheters, urinary catheters, drain catheters, and dialysis catheters.

40. (New) The medical device of Claim 37, further comprising an additional layer, wherein the graft polymer coating serves as a tie coat to adhere the additional layer to the substrate.

41. (New) The medical device of Claim 37, wherein the coating absorbs large quantities of water to provide moisture absorption or of lubricity.

42. (New) The medical device of Claim 37, wherein the coating comprises functional groups to attach or bind physiologically or pharmacologically active agents.

43. (New) The medical device of Claim 37, wherein the coating comprises a drug depot permitting the delivery of drugs from the graft polymer coating.

44. (New) A medical device comprising
a substrate constructed and arranged for insertion into a patient and having at least one lumen, said substrate having an exterior surface and an interior luminal surface defining the lumen,

wherein the substrate comprises polymers or copolymers of polyurethanes, silicones, polyolefins, polyamides and latex; and

a plurality of monomer molecules directly graft polymerized on the surface of the substrate, forming a coating thereon, wherein said coating on said substrate is a polymer or copolymer or a derivative of said polymer or copolymer formed from a monomer or derivative thereof selected from the group consisting an acrylamide, N,N-dimethylacrylamide, polyethyleneglycolacrylate, alkylacrylate, pyridine, piperidene, maleic acid, hydroxyethyl methacrylate, and mixtures thereof.

45 (New) The medical device of Claim 44, which is a catheter, guide wire or medical instrument.

46. (New) The medical device of Claim 45, wherein the catheter is selected from the group consisting of PTCA catheters, cardiology catheters, central venous catheters, urinary catheters, drain catheters, and dialysis catheters.

47. (New) The medical device of Claim 44, further comprising an additional layer, wherein the graft polymer coating serves as a tie coat to adhere the additional layer to the substrate.

48. (New) The medical device of Claim 44, wherein the coating absorbs large quantities of water to provide moisture absorption or of lubricity.

49. (New) The medical device of Claim 44, wherein the coating comprises functional groups to attach or bind physiologically or pharmacologically active agents.

50. (New) The medical device of Claim 44, wherein the coating comprises a drug depot permitting the delivery of drugs from the graft polymer coating.

51. (New) A medical device comprising

a substrate constructed and arranged for insertion into a patient and having at least one lumen, said substrate having an exterior surface and an interior luminal surface defining the lumen, wherein the substrate comprises polymers or copolymers of polyurethanes, silicones, polyolefins, polyamides, polyvinylchloride and latex; and

a plurality of monomer molecules directly graft polymerized on the surface of the substrate, forming a coating thereon, wherein said coating on said substrate is a polymer or copolymer or a derivative of said polymer or copolymer formed from a monomer or derivative thereof selected from

the group consisting an acrylamide, N,N-dimethylacrylamide, polyethyleneglycolacrylate, alkylacrylate, pyridine, piperidene, maleic acid, and hydroxyethyl methacrylate, and mixtures thereof.

52. (New) The medical device of Claim 51, which is a catheter, guide wire or medical instrument.

53. (New) The medical device of Claim 52, wherein the catheter is selected from the group consisting of PTCA catheters, cardiology catheters, central venous catheters, urinary catheters, drain catheters, and dialysis catheters.

54. (New) The medical device of Claim 51, further comprising an additional layer, wherein the graft polymer coating serves as a tie coat to adhere the additional layer to the substrate.

55. (New) The medical device of Claim 51, wherein the coating absorbs large quantities of water to provide moisture absorption or of lubricity.

56. (New) The medical device of Claim 51, wherein the coating comprises functional groups to attach physiologically or pharmacologically active agents.

57. (New) The medical device of Claim 51, wherein the coating comprises a drug depot permitting the delivery of drugs from the graft polymer coating.

58. (New) The medical device of claim 37, wherein at least a portion of both the interior and exterior surfaces of the substrate is coated with monomer molecules graft polymerized to said surfaces.

59. (New) The medical device of claim 44, wherein at least a portion of both the interior and exterior surfaces of the substrate is coated with monomer molecules graft polymerized to said surfaces.

60. (New) The medical device of claim 51, wherein at least a portion of both the interior and exterior surfaces of the substrate is coated with monomer molecules graft polymerized to said surfaces.

61. (New) The medical device of claim 37, wherein the entire surface of the interior luminal surface, the exterior surface or both, is coated.

62. (New) The medical device of claim 44, wherein the entire surface of the interior luminal surface, the exterior surface or both, is coated.
63. (New) The medical device of claim 51, wherein the entire surface of the interior luminal surface, the exterior surface or both, is coated.